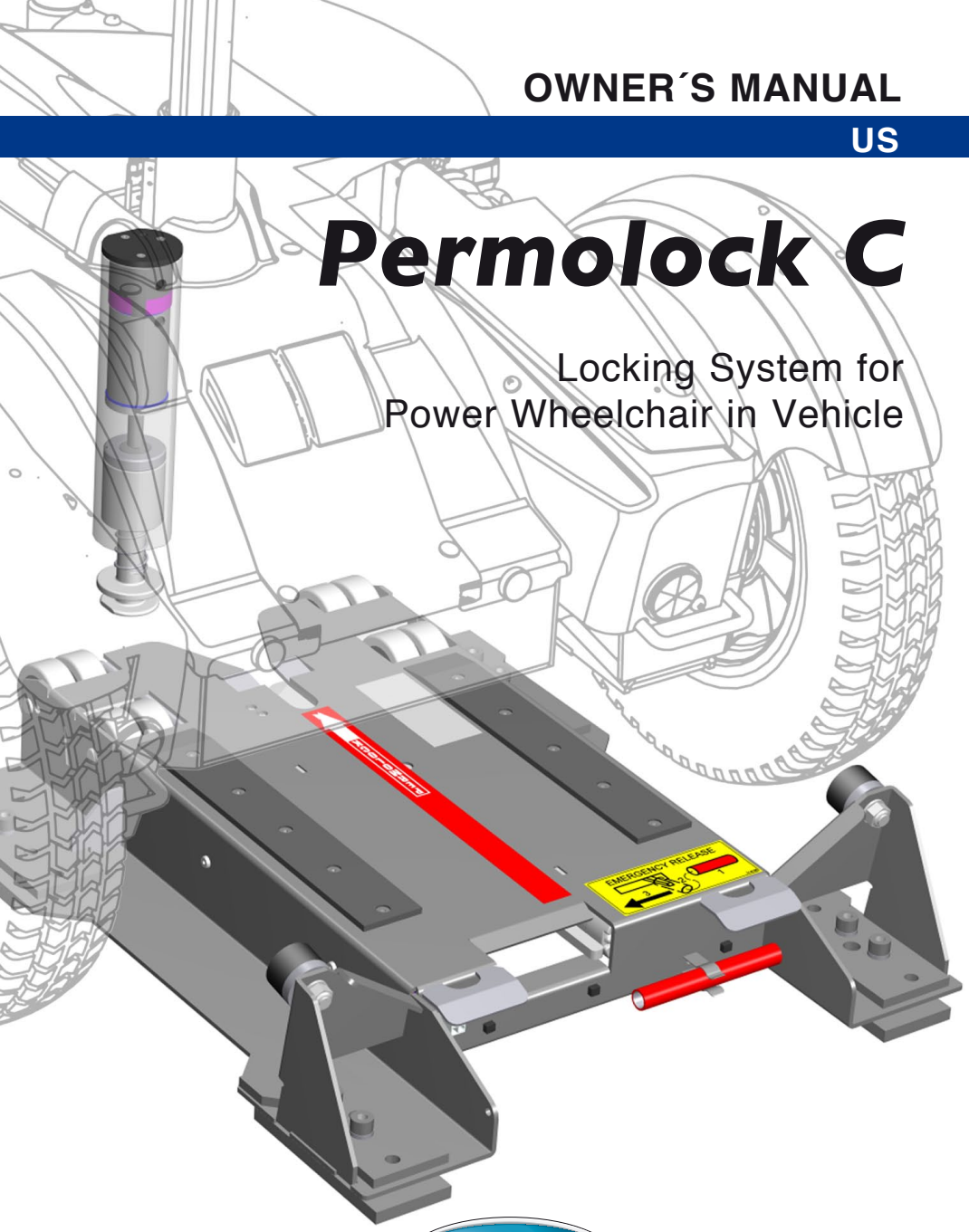
OWNER´S MANUAL

US

Permolock C

Locking System for
Power Wheelchair in Vehicle



permobil

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Permolock C

Locking System for Power Wheelchair in Vehicle

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Important information about owner´s manual

Congratulations on choosing Permolock. Our goal is for you to continue to feel satisfied with your choice of supplier and product.

Before you begin using your Permolock, it is important to read and understand the contents of these operating instructions and in particular the Safety Instructions.

These operating instructions are primarily intended to acquaint you with the Permolock's functions and capabilities and to advise you how you can use them in the best manner possible. They also contain important safety information and describe some of the problems which might arise in use.

Always keep the safety manual in your vehicle as you may need to consult its important information on use, safety and maintenance.

It is also possible to obtain information concerning our products from our home page on the Internet. You can find us at www.permobil.com.

All information, pictures, illustrations and specifications are based upon the product information that was available at the time that these operating instructions were printed. Pictures and illustrations that are found in these operating instructions are representative examples and not intended to be exact depictions of the various parts of the product.

We reserve the right to make changes to the product without prior notification.

Ordering of Documentation

If you are in need of another copy of the Owner's Manual, it can be ordered from Permobil, ask for item No. 205014-US-0.

TECHNICAL SUPPORT

In the event of technical problems, you should contact your dealer or Permobil Inc USA at 1-800-736-0925.

Always state the serial number when contacting Permobil to ensure that the correct information is provided.

SPARE PARTS & ACCESSORIES

Spare parts and accessories must be ordered through your dealer.

SCRAPPING THE WHEELCHAIR

Contact Permobil Inc. for information about scrapping agreements in force.

WARRANTY

A warranty registration card is attached to each new Permolock C.

The Permobil Inc. Product Warranty Information sets forth the conditions of the warranty.

Contact your dealer or Permobil Inc USA for information about the warranty period for this product.

Safety rules and regulations

General

Permolock C is a locking device for fixing Permobil power wheelchairs in place and is designed for use in vehicles.

It is important to read and follow the instructions and safety guidelines given in this owner´s manual before starting to use your Permolock, as mistakes in use could lead to risk of injury to user or passengers, or damage to the wheelchair, the Permolock and the vehicle.

Any unauthorized alterations to Permolock C could lead to increased risk of accident. Follow closely the recommendations in the section on Operation, in order to avoid risk of accident during use.

Warning labels

Throughout this manual the following symbol will be used to note items that have significant importance to safety concerns.

⚠ CAUTION

Please use caution where this symbol appears.

⚠ WARNING

Please use extreme caution where this warning symbol appears.Failure to observe warnings can lead to personal injury and property damage, including damage to the wheelchair.

⚠ WARNING

If the Permolock is involved in an accident of any kind, the locking base, plunger and manual release mechanism must be replaced. An accident can cause damage to the Permolock that you cannot see.

⚠ WARNING

Do not modify the Permolock or use any accessories or parts not specified by Permobil.

⚠ NOTE

Permobil is not responsible for personal injuries or property damage resulting from any person's failure to follow the warnings and instructions in this manual. Permobil is not responsible for injuries or damage resulting from failure to exercise good judgment.

Once the Permolock C has been installed by a National Mobility Equipment Dealers Association (NMEDA) Certified Dealer; any Permobil, Inc. Certified Dealer can service the Permolock C, as long as the part that is being serviced does not involve removing or replacing the locking base plate. If the locking base plate must be removed or replaced, a NMEDA Certified dealer should perform the service/repair.

⚠ WARNING

To be checked before first use
Before using your wheelchair with Permolock C, you must check that the chair has been suitably adjusted. Contact your supplier for information. Failure to properly install and use the Permolock increases the risk of serious injury or death in a sudden stop or crash.

To be checked before setting off
Check that the lamp on the control button in the vehicle is shining green after locking has been activated. If the light is not shining green, the wheelchair is not secure in the lock.

Maintenance and service
Carry out only the service and maintenance activities noted in this user manual. All other servicing, alterations and changes to the vital systems of Permolock C and its accessories must be carried out by a NMEDA certified Technician or person with sufficient knowledge to give a competent result. In case of doubt always contact a competent servicing engineer or Permobil.

Use only spare parts or accessories approved or recommended by Permobil. All other use could lead to changes which might impair the function and safety of the lock. It could also lead to the guarantee on your Permolock C becoming invalid.

⚠ CAUTION

Recycling of electronic parts
Obsolete electronics should be disposed of responsibly in accordance with local recycling regulations.

EMC requirements
The electronics in the vehicle locking system may be affected by external electromagnetic fields (e.g. from cellphones). Likewise the electronics in the locking system themselves may emit electromagnetic fields which could affect the surrounding area.

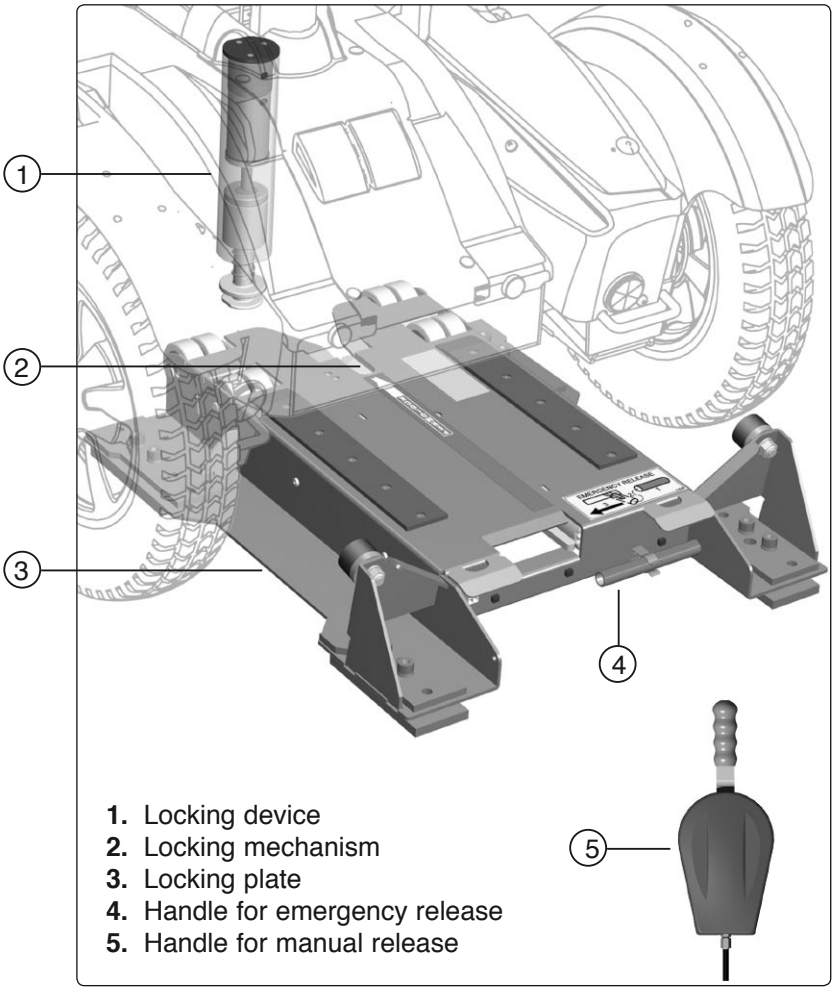
The threshold values for Electro-Magnetic Compatibility (EMC) relating to electric wheelchairs and their accessories are laid down in harmonized standards under EC Directive 93/42/EEC Medical Devices.

Permolock C meets these threshold values.

Design & Function

General

Permolock C consist of two elements. One is a locking device mounted to the wheelchair chassis and operated by a control button on the front edge of the armrest. The second element, a locking plate, is mounted in the vehicle. This is operated by a control button mounted in the vehicle.



1. Locking device
2. Locking mechanism
3. Locking plate
4. Handle for emergency release
5. Handle for manual release

Operation

General

Permolock C is designed to secure an occupied wheelchair in a moving vehicle and is suitable for either the driver or passengers.

Permolock C must only be used together with Permobil electric wheelchairs approved for this purpose and with the chair base available as an accessory.

It may be necessary to have your wheelchair adjusted to work with Permolock. A test locking must always be performed in the presence of the person fitting the lock.

The installation of the Permolock C must be performed by a National Mobility Equipment Dealers Association (NMEDA) Certified Dealer.

Operation

Locking the wheelchair

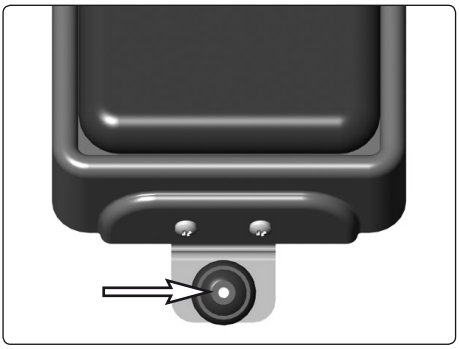
Permolock C consists of two elements. One is a locking device mounted on the wheelchair chassis and operated by a control button on the front edge of the armrest, see photo.

The second element, a locking plate, is mounted in the vehicle. This is operated by a similar control button mounted in the vehicle. The position of the control button may vary depending on the vehicle and the user's needs. The photo on page 13 shows an example of a commonly used position.

1. To prepare the wheelchair for locking, keep the button on the front edge of the armrest pressed in for three seconds - the locking device underneath the wheelchair will extend.

The locking device will remain in extended position for 40 seconds. During this period the control button lamp will show an orange color, indicating that the wheelchair is ready for locking in the locking plate. If you do not manage to lock the wheelchair during this time, repeat the above procedure.

The locking device's control button is mounted on the wheelchair armrest.



Control button lamp.

Locking the wheelchair

2. Move the wheelchair straight in over the locking plate so the locking device on the chair engages with the locking plate mechanism and comes to a mechanical stop. The locking plate control button, which is mounted in the vehicle, will shine green. This indicates that the wheelchair has been correctly locked.

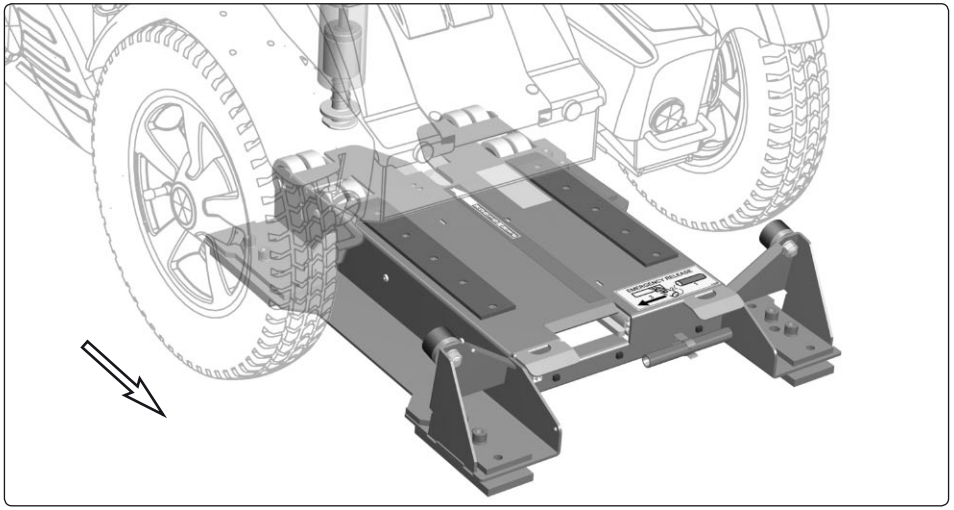
Example of position of control button in the vehicle.

⚠ WARNING

Make sure the lamp on the control button at the front edge of the armrest lights up orange as you drive in over the locking plate.

Check that the lamp on the control button in the vehicle is shining green after locking has been activated. If the lamp is not green, your wheelchair is not secured in the locking plate and could come loose in the event of a collision.

3. After you are correctly locked in the Permolock, fasten your vehicle mounted seat belt.



Move the wheelchair in over Permolock C.

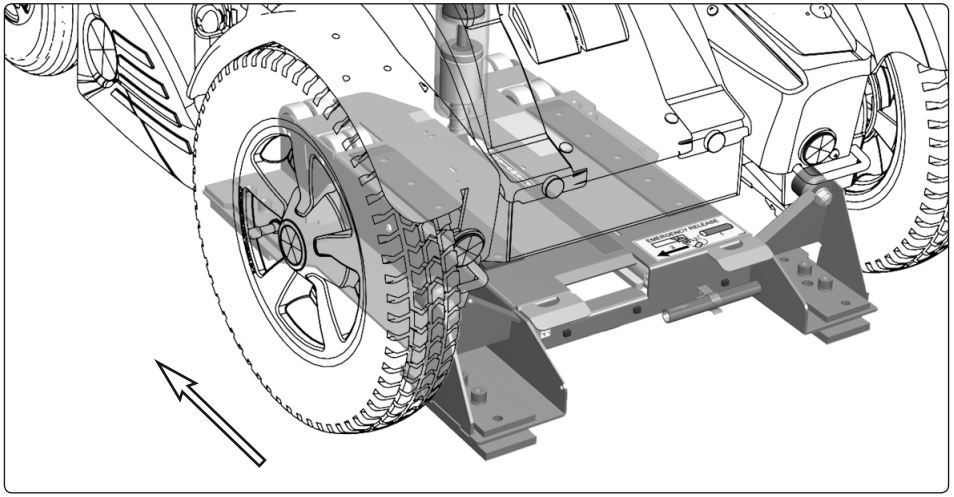
Releasing the wheelchair

Wheelchair release is performed electrically and is activated with the control button mounted in the vehicle. The position of the control button may vary, depending on the vehicle and the user's needs. The photo to the right is an example of a commonly used position.

Example of position of control button in the vehicle.

1. To open the locking mechanism on the locking plate, keep the locking plate control button pressed in for three seconds if the vehicle is turned on at the ignition, otherwise for one second. The locking plate mechanism will open and the wheelchair can now be backed out of the lock.

When the wheelchair is being backed out of the locking plate, the control button's green lamp will go out. After 15 seconds, the lock will return to its original position and is then ready for relocking again.



Backing the wheelchair out of Permolock C.

Manual release of wheelchair

If the vehicle battery is discharged, it will still be possible to release the wheelchair manually. This is done with a manual release lever, the position of which in the vehicle may vary depending on type of vehicle and the user's needs.

1. To open the locking plate mechanism manually, move the lever to its open position, see photo. The locking plate mechanism will open and the wheelchair can now be backed out of the lock.

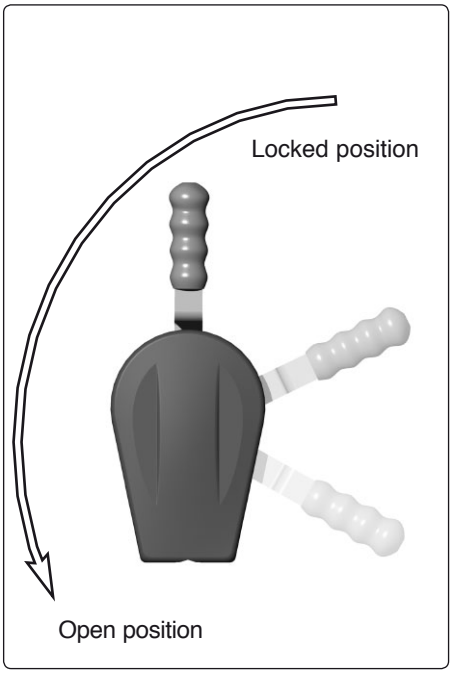
NOTE

In the event of manual release on a steep upwards gradient, the wheelchair may simultaneously be "driven" forward to ease release.

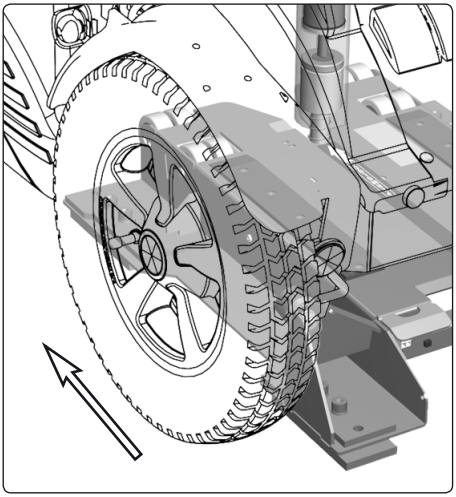
2. As the wheelchair is being backed out of the locking plate, reset the locking mechanism to locked position by moving the lever back to its original position.The lock is then ready for relocking again.

CAUTION

Always reset the locking mechanism to the locked position after backing the wheelchair off the locking plate. If you do not reset the lock, it will not be ready for relocking.



Manual release of wheelchair



Backing the wheelchair out of Permolock C.

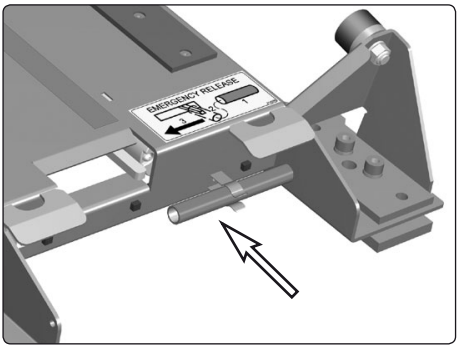
Emergency release of wheelchair

In an emergency, the locking mechanism can be opened manually with the emergency handle on the front edge of the locking plate.

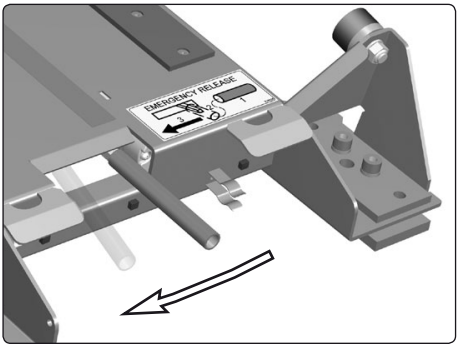
1. Remove the emergency handle from its bracket, see photo.
2. Mount the emergency handle on the locking mechanism, see photo.
3. Slide the emergency handle sideways while backing the wheelchair out of the lock, see photo.

⚠ WARNING

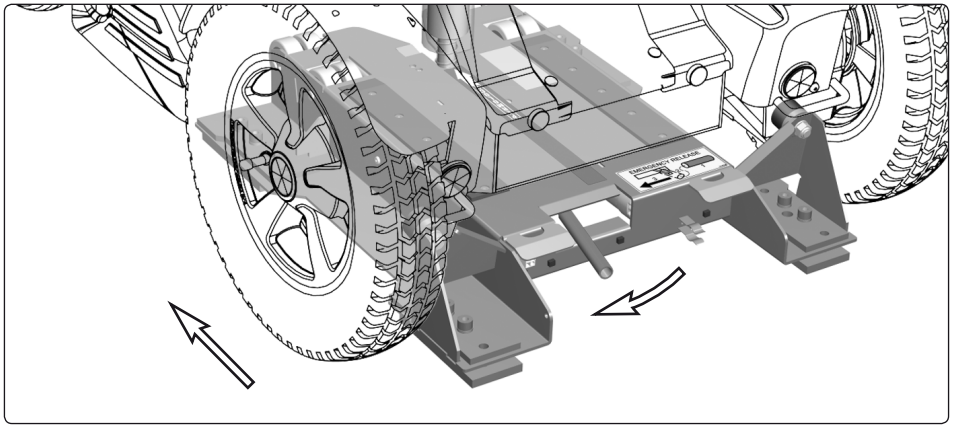
The user will need assistance in operating the manual emergency release, because in most cases the user will not be able to reach it.



Handle for manual release in emergency situation.



Mount the handle and press to the left.



Backing the wheelchair out of Permolock C.

Maintenance

Cleaning

The following is general advice recommended by Permobil. For severe soiling or damage to surface finish, contact Permobil for information.

For normal cleaning proceed carefully with a soft cloth/sponge, hot water and a mild detergent. Wipe down carefully with a cloth and water, and dry off.

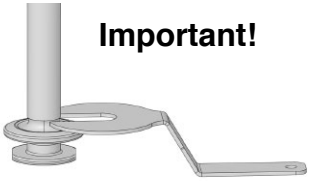
⚠ VARNING

Never hose the lock down as the electronics may be damaged.

Check the diameter of the locking device regularly using the accompanying inspection wrench. If the locking device fits within the wrench opening, then the locking device is worn and therefore must be replaced.

Regular maintenance

- Sparingly grease the contact surfaces of the locking device and the locking plate mechanism on a regular basis (Lubetec Redguard, Art.no.1190). Use a file to remove any sharp edges.
- Check the diameter of the locking device regularly using the accompanying inspection wrench. If the locking device fits within the wrench opening, then the locking device is worn and therefore must be replaced.



Check the diameter of the locking device regularly.

Technical specifications

DATA

General

Name	Permolock C

Dimensions and weight

Length	20” (500 mm.)
Width	17” (425 mm.)
Height	3 1/4 (83 mm.)
Weight	29 lbs.

Electrical system

Voltage Permolock	12V / Car
Voltage Locking device	24V / Wheelchair

INSTALLATION

Permolock C

Locking System for
Power Wheelchair in Vehicle

Installation

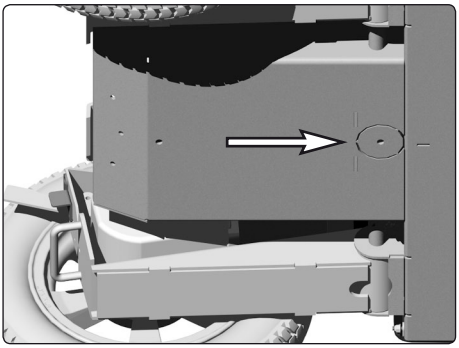
Installation of locking device on the wheelchair chassis (C400, C500)

Read through the instructions before starting installation.

1. Remove the wheelchair chassis cover, the right-hand battery and, on Pilot+ models, the main fuse. For a detailed description, see the appropriate chassis service manual.
2. Lift/angle the wheelchair so that the underside of the chassis can be accessed.

⚠ WARNING

The wheelchair is heavy, therefore ensure it remains stable after the chassis has been lifted/angled or it could fall and cause personal injury or property damage.



Tap loose the plate covering the channel.

3. Using a hammer and tool, tap loose the plate covering the channel intended for the locking device, see photo.

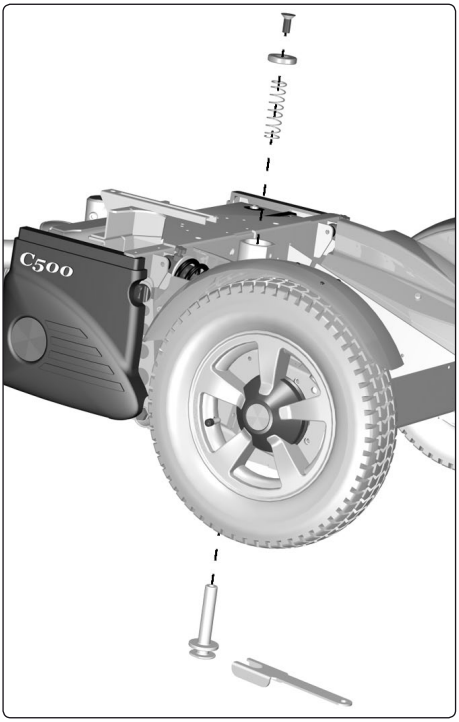
   With a long tool or similar through the chassis channel, the plate can be tapped loose from the inside of the chassis and in this way there is no risk of the plate jamming in the channel.

   Use a file to remove any sharp edges around the channel opening.

⚠ CAUTION

Grease the sliding surfaces of the locking device (Mobil 1 Synthetic grease, Product Code: 53201-0), before mounting.

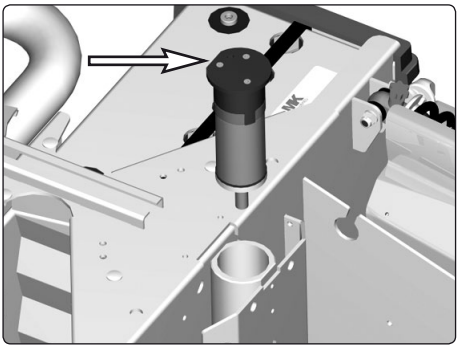
Check before installation that the channel in the chassis is free of electroplating residue and dirt that could cause the locking device to become stiff and difficult to operate. The lock pin could get stuck up or down.



Installation of locking device.

4. Install the locking device from underneath the chassis. Use the accompanying tool to keep the locking device in place, see photo.
5. Install spring, washer and screw from the upper side of the chassis. A long screwdriver or similar can be used to guide the parts into place. Tighten the screw, applying pressure to the underside of the chassis using the accompanying tool.

Tightening torque: 43 ft-lbs (59Nm).



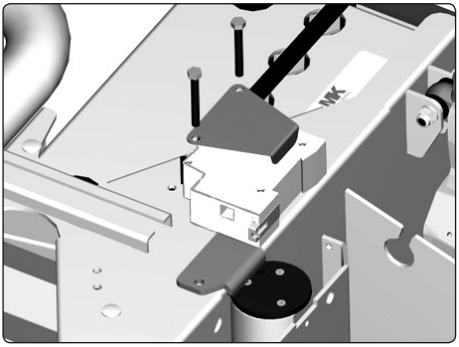
Fit the solenoid in the chassis with the flat surface of the upper part facing backwards.

⚠ CAUTION

Make sure the locking device fits easily into the chassis channel, otherwise it will not install properly.

6. Set the wheelchair back on all four wheels.
7. Install the solenoid in the chassis. Fit the solenoid in the chassis with the flat surface of the upper part facing backwards, see photo.
8. **Chassis with Pilot+**
   Fit the washer supplied.

   Install the main fuse along with the plate supplied. Fit using the longer screws supplied (M5x40) - see photo.



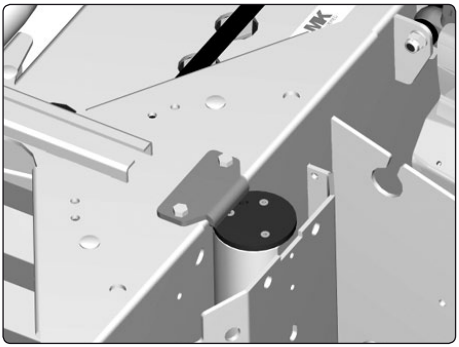
Installation of solenoid on chassis with Pilot+.

⚠ CAUTION

Note the direction in which the fuse is installed. The ON/OFF position must match the sticker supplied for the chassis cover.

Chassis with VSI
Fit the washer supplied.

Fit the washer using the shorter screws supplied (M5x10), see photo.

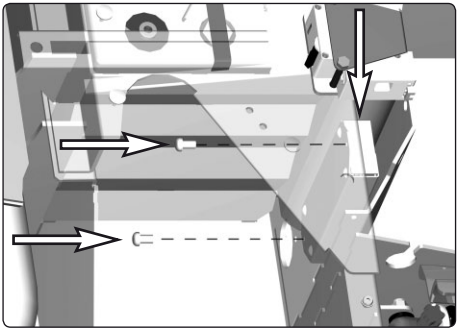


Installation of solenoid on chassis with VSI.

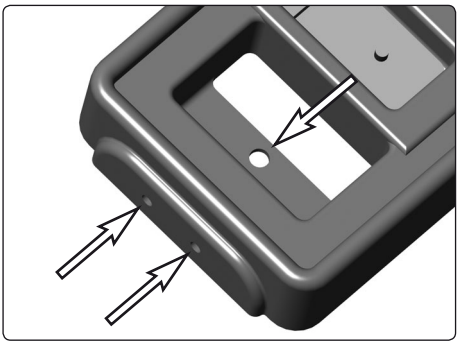
Installation of control electronics on the wheelchair chassis (C400, C500)

Read through the instructions *before* starting installation.

1. Install the control electronics for the locking device in the wheelchair chassis. Guide the electronics box down on the right side of the locking device, see photo.
2. Screw down the box with the two M4 screws supplied, see photo.
3. Using the control button bracket, mark out attachment holes for the bracket at the front edge of the armrest. Drill Ø 3mm holes. Drill also a Ø 6mm hole for the cable ties for the cabling inside the armrest, see photo.
4. Fit the locking device control button at the front edge of the armrest using the M3 screws supplied, see photo.



Install the control electronics box using the M4 screws supplied.



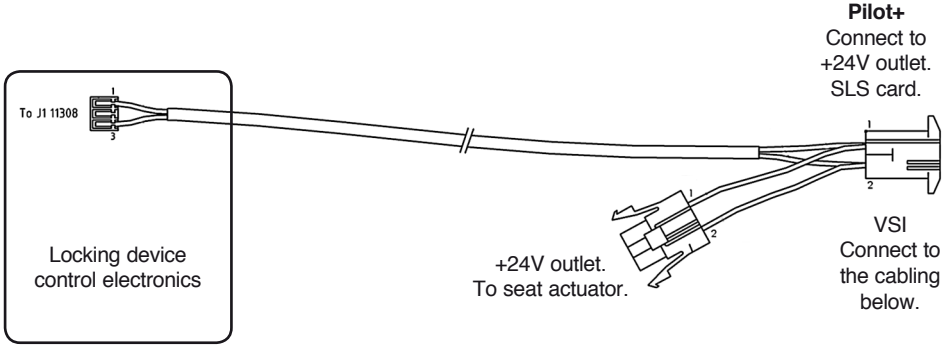
Drill holes for the cable button bracket and the cable ties.

5. Fit the cabling for the control button using cable ties inside the armrest, see photo.

Fit the control button cabling and connection contact with the cable ties in the armrest.

6. Chassis with Pilot+

Connect the control electronics to the +24V outlet on the SLS card. If the wheelchair seat is equipped with an electric actuator, remove the contact for this from the SLS card and instead connect it to the +24V outlet on the cabling for the control electronics, see photo. For more information on the SLS card, see the current chassis service manual.

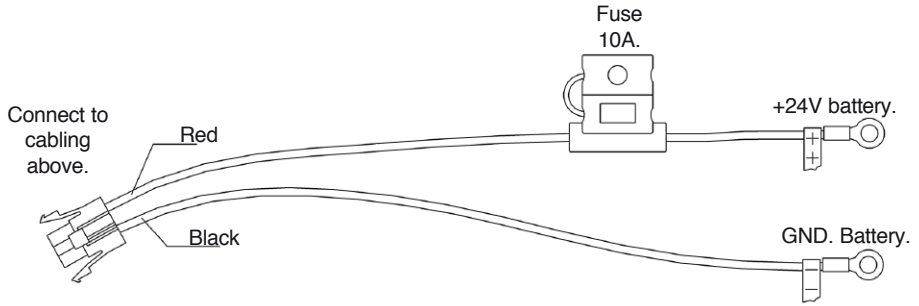


Pilot+ *Connect the control electronics to the +24V outlet on the SLS card. If the wheelchair seat is equipped with an electric actuator, connect this to the new +24V outlet.*

VSI: *Connect the control electronics cables to the cables below.*

Chassis with VSI

Using the cabling supplied, connect the control electronics direct to the wheelchair batteries.



Cabling for connection to VSI in chassis.

Installation of locking plate in the vehicle - General

Read through the instructions *before* starting installation.

⚠ CAUTION

To ensure that the wheelchair locking device ends in the correct position for locking, it is important that the locking plate is mounted correctly in relation to the wheelchair wheels. When mounting on a sloping surface, the locking plate may be raised using spacers to ensure satisfactory engagement and locking. See the examples below. Spacers for use when installing on a sloping surface are available as accessories, see page 17.

When installing the locking plate on a sloping surface, alternative mounting of the rubber rollers on the plate may be necessary, see page 25.

The chair lock must be anchored in a manner that is safe for the type of vehicle involved and which conforms to the relevant countryís regulations.

The chair lock must be anchored in such a way that no other components are damaged and the strength of the vehicle floor is not impaired.

Installation with sloping surface

⚠ CAUTION

In order to ensure proper installation:

1. Check after installation that the chair lock is not warped and that the lock functions correctly.

2. The lock must be tested with the user sitting in the wheelchair.

3. Check that the wheelchair shock absorbers are set for the right user weight, see the relevant chassis service manual.

4. Also check that the air pressure in the wheelchair tires is correct, see the relevant chassis user manual.

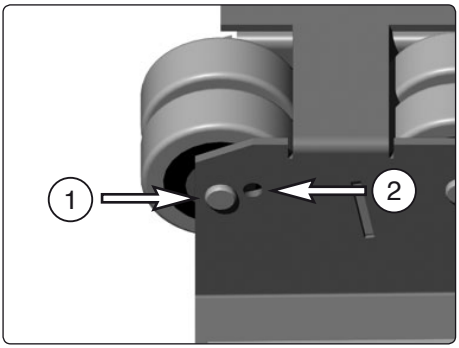
Adjustment of locking plate

Rubber rollers

The rubber rollers on the rear edge of the locking plate can be installed in two different positions, see photo.

Position 1: Standard, rubber rollers mounted in the rear holes (1), see photo.

Position 2: Alternative mounting where the plate is fitted on a sloping surface, and the rubber rollers are mounted in the front holes (2), see photo.



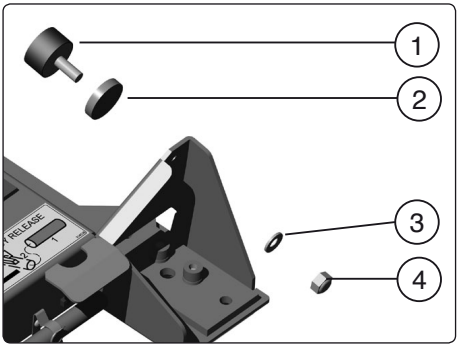
The position of the rear rubber rollers must be altered where the plate is installed on a sloping surface.

Rubber stops

The rubber stops at the front edge of the locking plate can be fitted with or without spacers, depending on the specific wheelchair chassis.

Permobil C400: Fit the rubber stop (1) with a spacer (2), screw it firmly in place using a nut (4) and washer (3), see photo.

Permobil C500: Fit the rubber stop (1) without a spacer, screw it firmly in place using a nut (4) and washer (3), see photo.



The fitting of the rubber stops should be adjusted to suit the specific wheelchair.

Installation of locking plate with standard bracket

Read through the instructions *before* starting installation.

1. Install the four brackets in the standard position (the central hole configuration) on the lock plate, see photo.

2. Position the lock plate correctly in the vehicle.

WARNING

The locking plate must always be installed with its front edge facing the direction of travel, see photo on page 27.

3. Using the hole between the bracket bolts as a guide, drill 4 x Ø10 mm holes through the vehicle floor, see photo.

4. Remove the locking plate and dismount the four brackets.

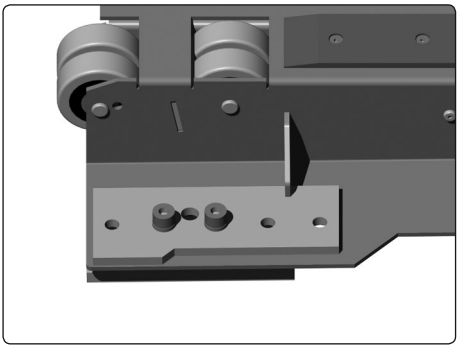
5. Install the four brackets in the vehicle using countersunk screws of min. M10 8.8 through the holes previously drilled.

The screws must go right through and have a suitable body washer and nut on the underside.

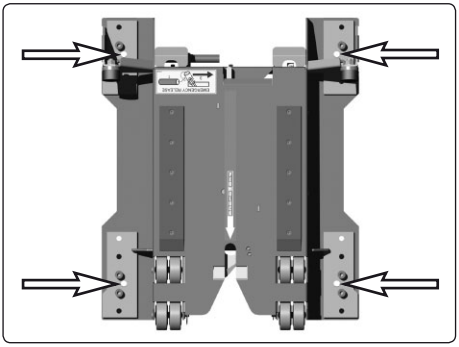
WARNING

These screws are not supplied with Permolock C. Screws must be M10 8.8 grade and of a suitable length for the floor thickness of the vehicle.

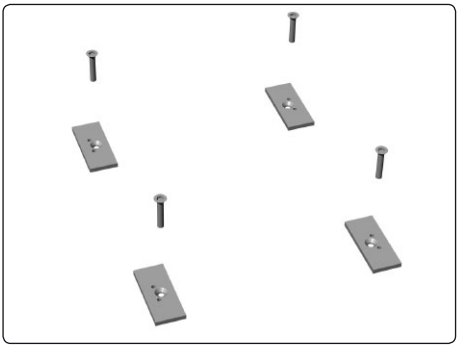
Incorrect fastener use could cause the Permolock to break free in a collision and cause serious personal injury or property damage.



One of the lock plates four brackets installed in the standard position.



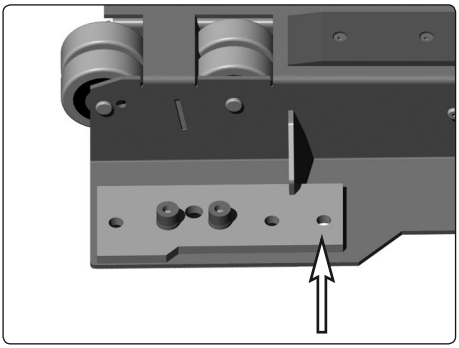
Use the hole between the bolts of the brackets as a guide.



Install the four brackets in the vehicle.

6. Position the locking plate correctly on top of the mounting plates. It can be installed in three different positions, ”Standard” or + or - 30 mm. The front hole is not used with the standard bracket.
7. Mount the plate in the desired position with the supplied screws and washers.

   Tightening torque:18 ft-lbs (24,5Nm)
8. Connect the cabling from the locking plate to the vehicle’s electrical system. Connect the red cable to the fused +12V (10A).

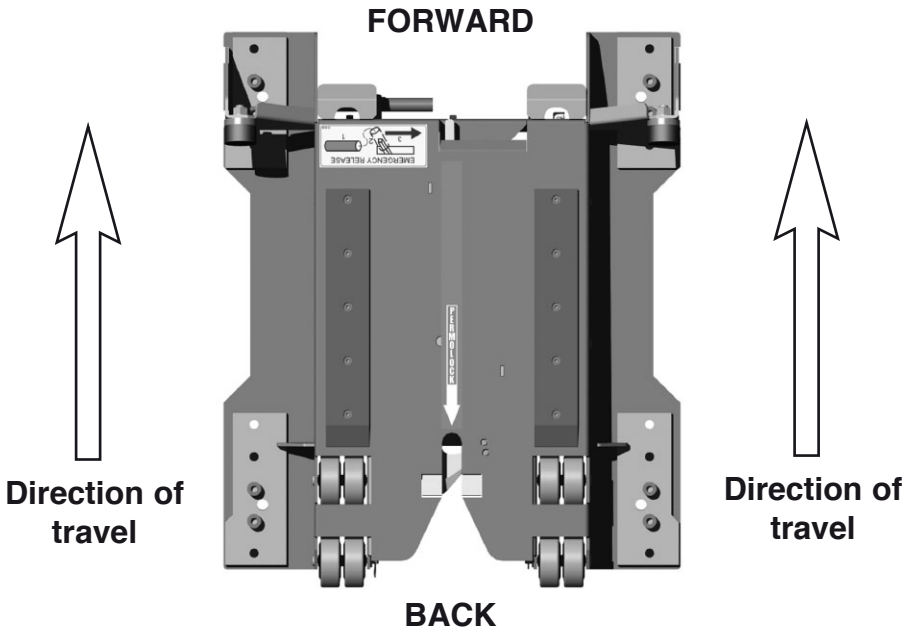


Locking plate mounted in standard position. The hole indicated is not used when installing with the standard bracket.

Red cable - +12V. (10A)

Black cable - Earth

Orange cable - 12V switched power, key on engine running.



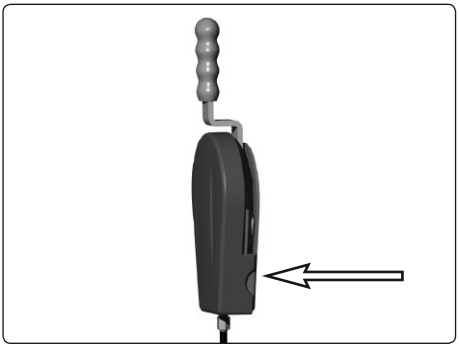
The lock plate must always be fitted with its front edge in the vehicle´s direction of travel.

Installation of manual release lever in a vehicle

Read through the instructions *before* starting installation.

The manual release lever must be installed so that the user can easily operate it when necessary. The lever is intended for cases where the vehicle electrical system is not functioning optimally.

Remove the plastic cover from the lever by manually unclipping the sides of the cover at the bottom edge,see photo.



The plastic cover can be unclipped by hand.

Preliminary adjustment

The release mechanism can be turned to suit installation on either the right or left side.

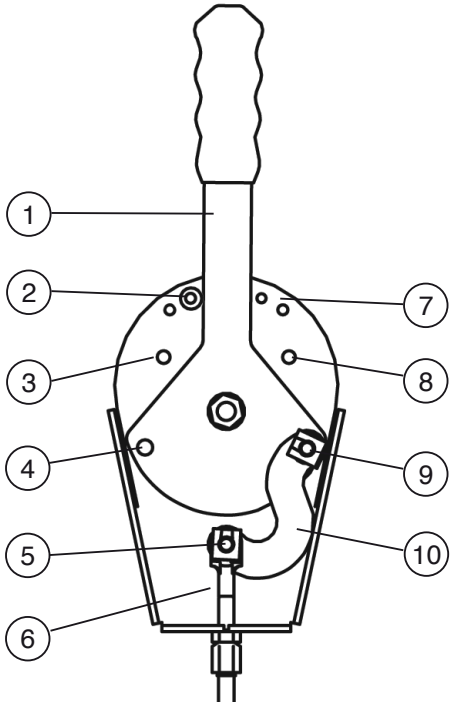
WARNING

The handle must always be mounted so that the stop screw (7) is in front of the release handle (1), see page 29. This will prevent the release control from inadvertently releasing.

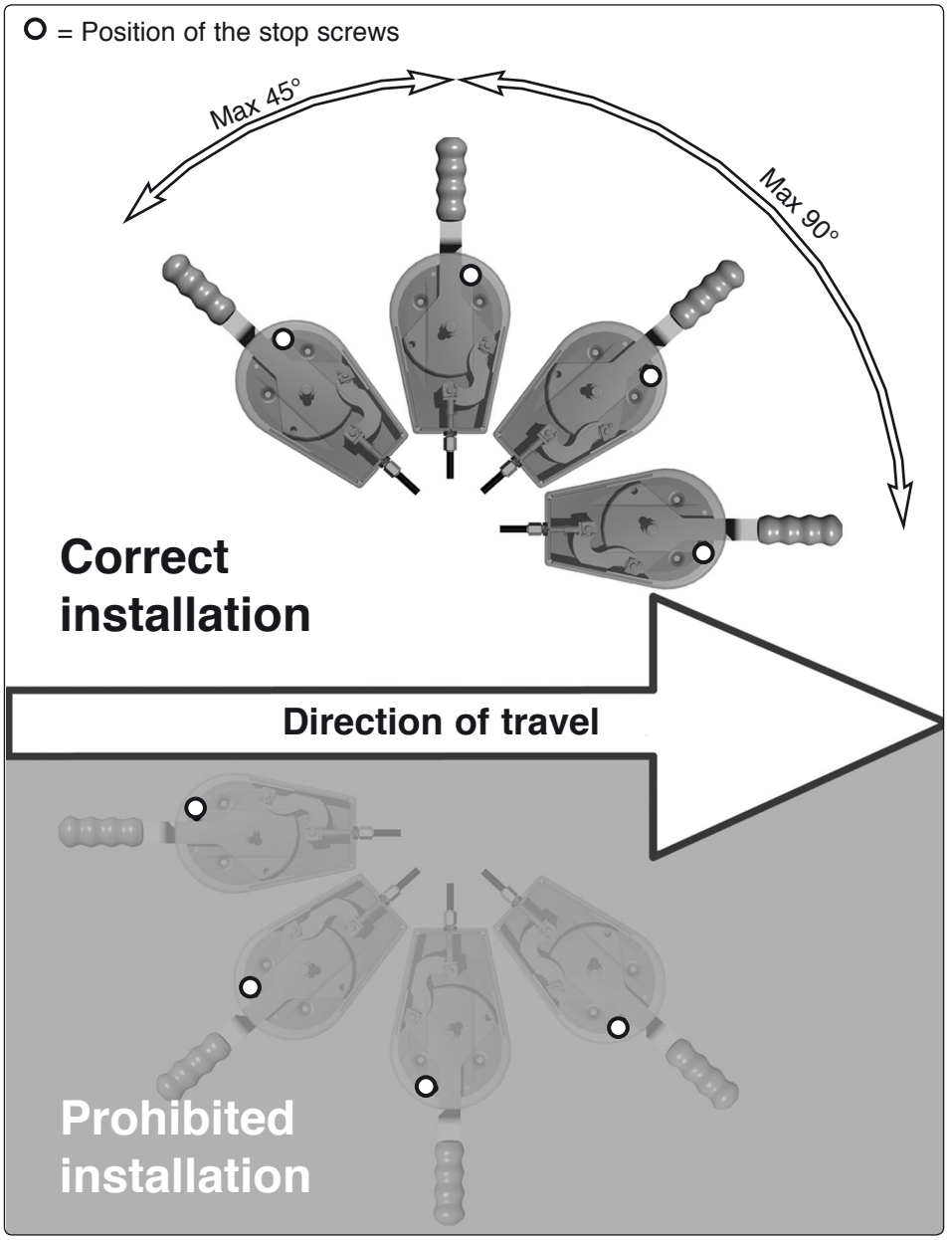
1. Move the stop screws between positions 2 and 7, see photo.
2. Remove the cable bracket (5) from the release arm (10) see photo.
3. Turn the release arm (10) and move it between fixing points 4 and 9.
4. Remove the cable bracket (5) from the release arm (10) see photo.

Installation

1. Install the release controls using three M4 screws with countersunk heads through holes 3, 6 and 8, see photo.
2. Refit the plastic cover.



Manual release handle.



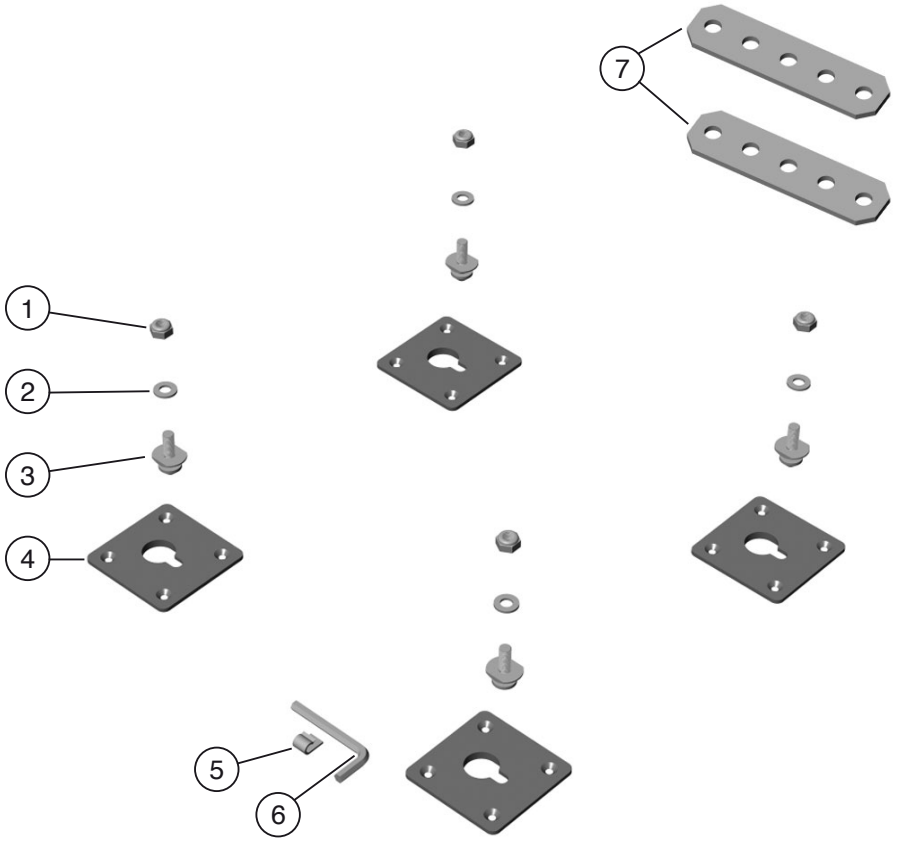
Installation of release lever.

Installation of quick anchoring set *Order no:1820549*

List of parts that should be in the set

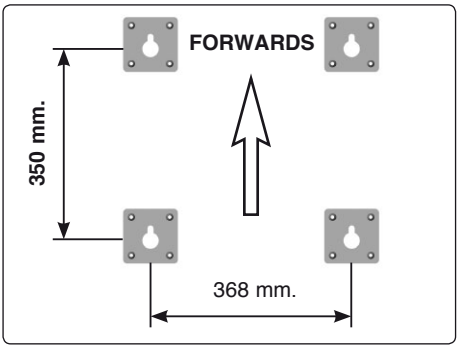
1. 4 pcs. Lock nuts M10 fzb
2. 4 pcs. Washer BRB 10.5x20x2 fzb
3. 4 pcs. Keyhole bolt
4. 4 pcs. Keyhole plates
5. 1 pc. Tool clamp
6. 1 pc. Allen key 8 mm
7. 2 pcs. Installation spacers

Read through the instructions *before* starting installation.



Quick anchoring set.

1. Check that the cc distance between the keyholes is L= 350 mm. and B= 368 mm. Mark the hole configuration of the plates on the vehicle floor, see photo.



WARNING

The locking plate must always be installed with its front edge facing the direction of travel, see photo on page 27.

The plates must be fitted with the narrow end of the hole in the direction of travel or the Permolock could come loose in a collision.

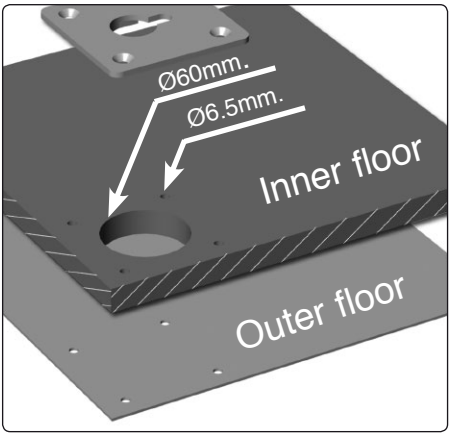
2. Drill a Ø6.5mm. hole through the inner and outer floor of the vehicle, using the keyhole plate as a template.

3. Mark the centre of the keyhole's large radius. Using a hole-making tool, drill a Ø60mm hole through the inner floor of the vehicle, see photo.

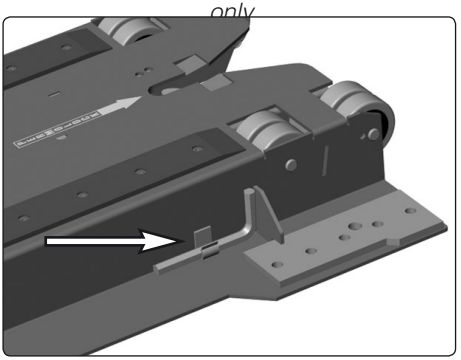
4. Screw the keyhole plates firmly in place using ISO 10642 M6 10.9 Fe/Zn 5 C1 screws of an appropriate length for the thickness of the floor.

The screws must go right through and have a suitable body washer and nut on the underside.

5. Fix the self-adhesive tool clamp to the locking plate, see photo.



The large Ø60 mm hole should be drilled in the inner floor of the vehicle only



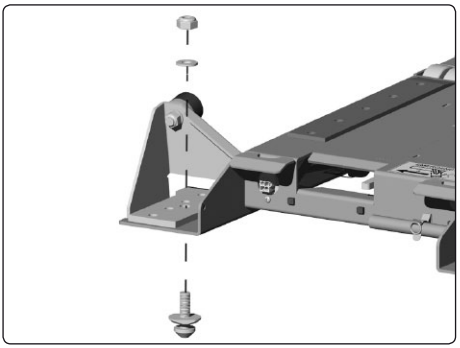
6. Screw the keyhole bolts in place in the hole configuration that best suits the user (choice of 4).

Use the supplied 10.5x20x2 shim and locknut M10.

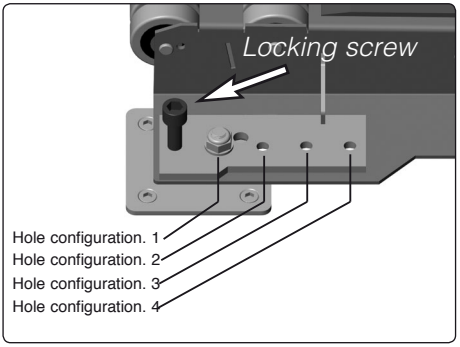
⚠ CAUTION

It is important that the lock plate be fitted in a straight line in relation to the wheelchair wheels. If necessary, fit spacers between the keyhole bolts and the lock plate, see page 24.

The chair lock must be anchored in a manner that is safe for the type of vehicle involved and which conforms to the relevant country´s regulations or the Permolock might not perform as certified in the crash tests.



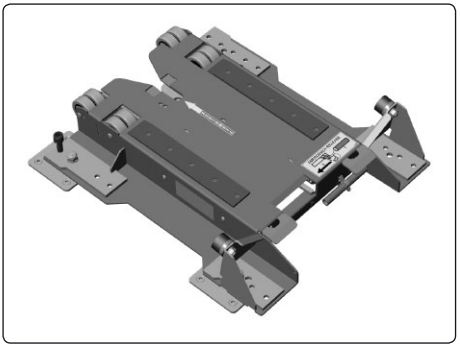
Screw the keyhole bolts in place using the hole configuration that best suits the user (choice of 4).



Fit the keyhole bolts in any of the four hole configurations. Lock using the locking screws after installation in the vehicle.

7. Secure the screws ISO 4762 M10x35 12.9 Fe/Zn 8 C4 in the threaded holes immediately in front of the rear keyhole bolts, see photo.

8. Push the lock plate into the keyhole plates and lock by screwing the two lock screws firmly in place, see photo.

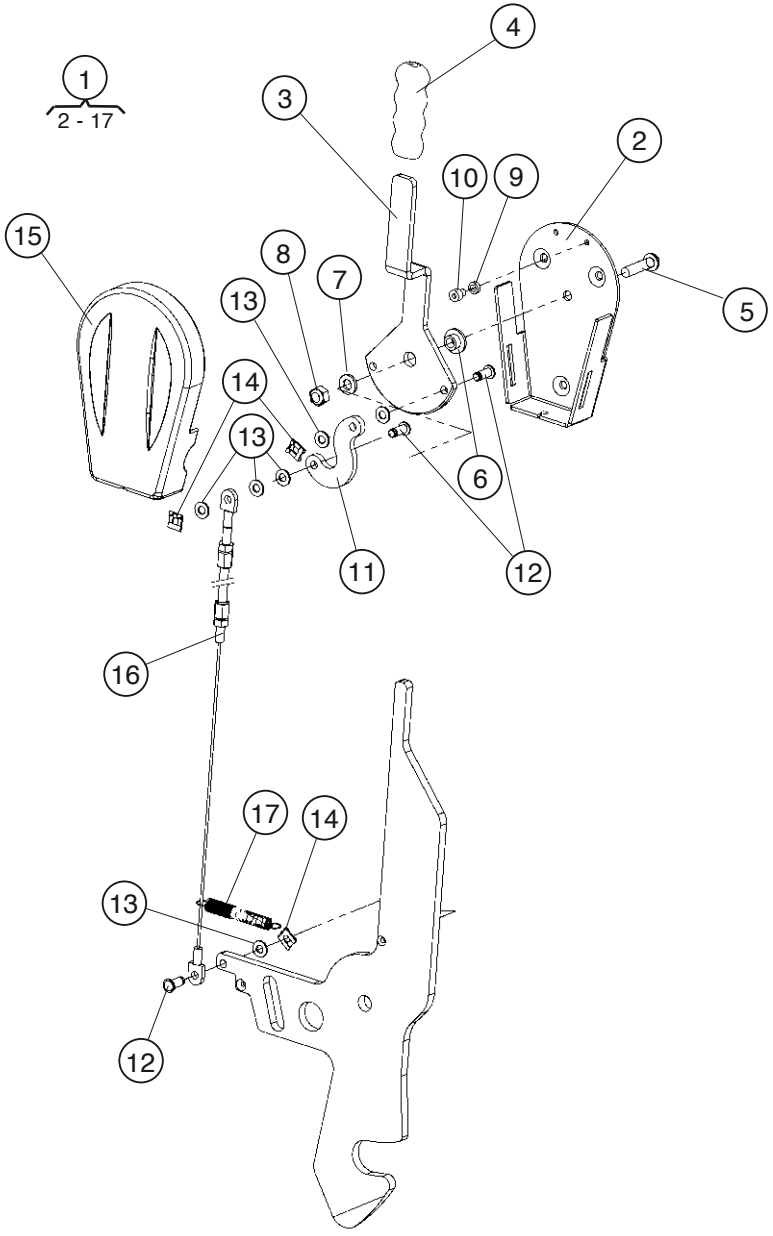


Permolock C installed with quick anchoring set.

SPARE PARTS

Permolock C

Locking System for
Power Wheelchair in Vehicle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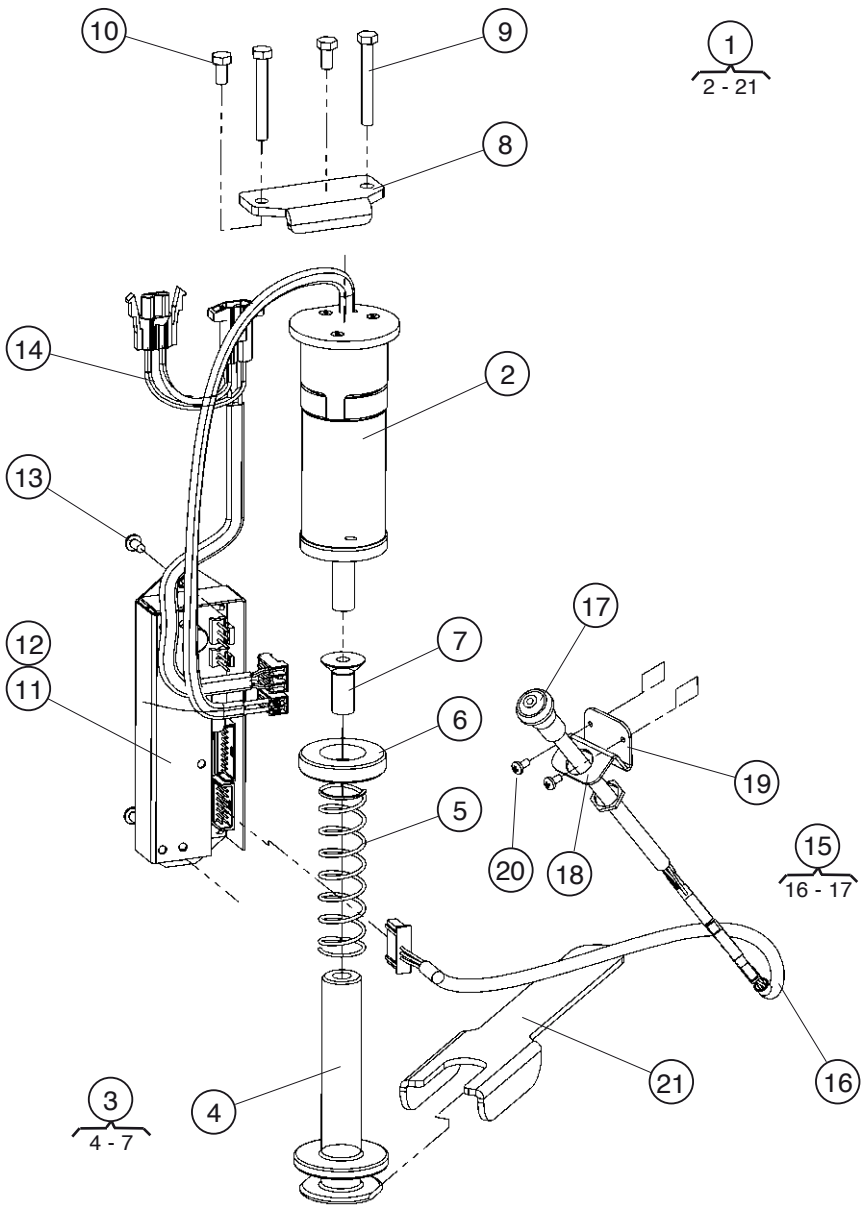
POS	QTY	PART NO.	DESCRIPTION	
01	1	314036-99-0	MAN.CONTROL	
02	1		HOLDER	
03	1		HANDLE	
04	1	612837-02-0	PLASTIC KNOB 4x13	
05	1	602367-99-0	SCREW ISO 7380 M6x25 10.9 Fe/Zn 5 C1	
06	1		BUSH	
07	1	600238-99-0	WASHER ISO 7089 6 200 HV Fe/Zn 5 C1	
08	1	600227-99-0	LOCKINGNUT ISO 7040 M6 Fe/Zn 5 C1	
09	1	601296-99-0	WASHER ISO 7089 4 200 HV Fe/Zn 5 C1	
10	1	601282-99-0	SCREW ISO 4762 M4x5 8.8 Fe/Zn 5 C1	
11	1		HOOK	
12	3		COTTER	
13	6	600842-99-0	WASHER 5 Fe/Zn 5 C1 (SRB 5.3x12x1)	
14	3	603083-99-0	SHACKLE	
15	1	313997-00-0	COVER	
16	1	314526-99-0	WIRE	
17	1	612885-99-0	SPRING DF 0,5x8x60	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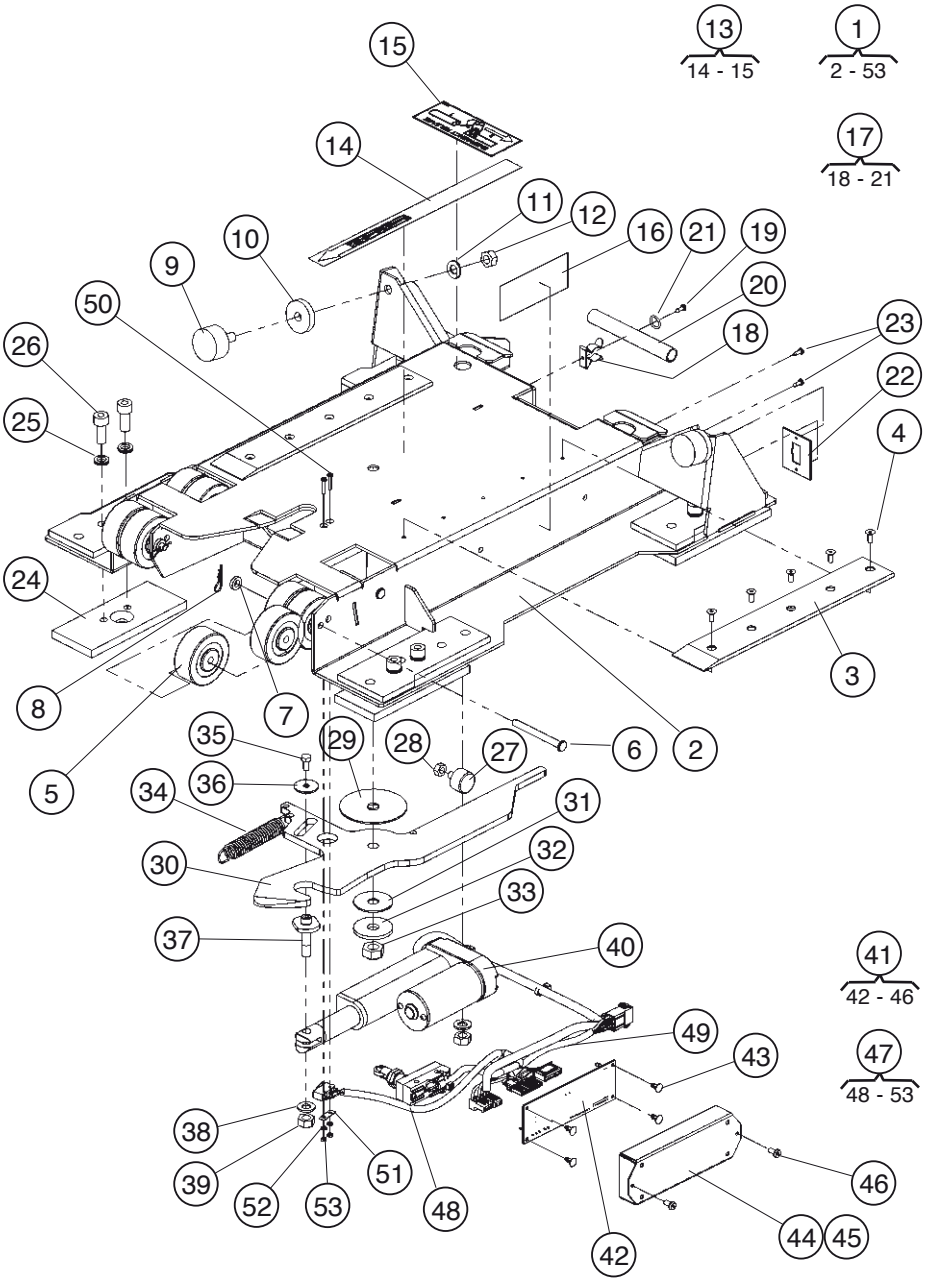
POS	QTY	PART NO.	DESCRIPTION	
01	1	313344-99-0	LOCK	
02	1	612875-99-0	SOLENOID RE-5 24V 29,5	
03	1	1820529	PLUNGE KIT	
04	1		VEHICLE LOCK	
05	1		SPRING TF 1,6x20x77,1	
06	1		WASHER	
07	1	612360-99-0	SCREW ISO 10642 M10x25 10.9 Fe/Zn 8 C1	L.C DIN 267-28
08	1		SPACER	
09	2	612882-99-0	SCREW ISO 4017 M5x40 8.8 Fe/Zn 5 C1	
10	2	601161-99-0	SCREW ISO 4017 M5x10 8.8 Fe/Zn 5 C1	
11	1	313631-99-0	PCB PERMOLOCK C	
12	1	306971-99-0	STICKER	
13	2	601381-99-0	SCREW ISO 7380 M4x8 10.9 Fe/Zn 5 C1	
14	1	1820542	CABLE KIT 24V P+/VSI	
15	1	311365-00-0	CABLE KIT Release button	
16	1		CABLE	
17	1		CABLE	
18	1	1820526	STICKER KIT	
19	1		BRACKET	
20	2	602065-99-0	SCREW ISO 7045 M3x6 4.8 Z Fe/Zn 5 C1	
21	1	314541-99-0	TOOL	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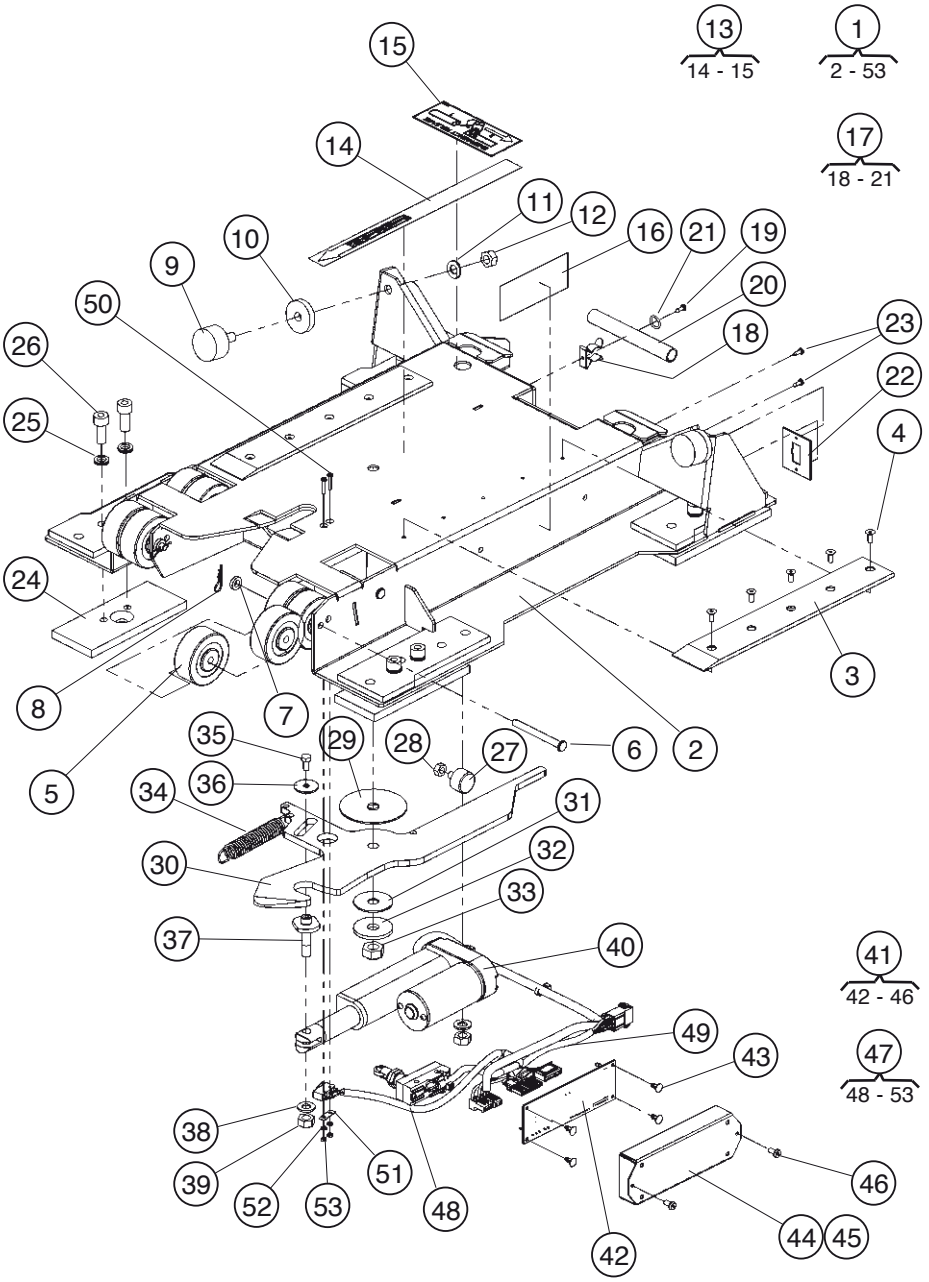
POS	QTY	PART NO.	DESCRIPTION	
01		313072-28-0	VEHICLE LOCK	
02	1		PLATE	
03	2	313047-00-0	SLIDE BAR	
04	10	600208-99-0	SCREW DIN 7991 M4x10 10.9 Fe/Zn 5 C1	
05	8	612913-99-0	WHEEL Ø50x19	
06	4	612840-99-0	CYLINDRIC BOLT ISO 2341B 6x60 Fe/Zn	
07	4	600238-99-0	WASHER ISO 7089 6 200 HV Fe/Zn 5 C1 (6,4x12x1,6)	
08	4	612839-99-0	HITCH PIN CLIP Ø1,2 Stright	
09	2	612721-99-0	RUBBER BLOCK Ø30x15 M8x20 type D Nr 60SH	
10	2		SPACER	Only C-400
11	2	600239-99-0	WASHER ISO 7089 8 200 HV Fe/Zn 5 C1 (8,4x16x1,6)	
12	2	600228-99-0	LOCKING NUT ISO 7040 M8 6 Fe/Zn 5 C1	
13	1	1820526	STICKER KIT	
14	1		STICKER GUIDE LINE	
15	2		STICKER EMERGENCY RELEASE	
16	1		STICKER CHASSIS NO	
17	1	1820527	EMERGENCY HANDLE KIT	
18	1		SPRING CLIP Ø3,2 (13-15) fzb	
19	1	600772-99-0	SCREW ISO 7049 ST 2,9x9,5 C Z Fe/Zn 5 C1	
20	1		EMERGENCY HANDLE	
21	1		RUBBER RING Ø11,1x1,6 NBR70	
22	1		PLATE BRACKET	
23	2	600772-99-0	SCREW ISO 7049 ST 2,9x9,5 C Z Fe/Zn 5 C1	
24	4		PLATE	
25	8	612888-99-0	LOCK WASHER 8,7x13,5x2,5 NORDLOCK	
26	8	600203-99-0	SCREW ISO 4762 M8x20 8.8 Fe/Zn 5 C1	
27	1		RUBBER BLOCK Ø20x12 M6x10 type D NBR60SH	
28	1	600227-99-0	LOCKING NUT ISO 7040 M6 6 Fe/Zn 5 C1	
29	1		WASHER LOW FRICTION	
30	1		HOOK	
31	1		WASHER LOW FRICTION	
32	1		WASHER	
33	1	612831-99-0	LOCKING NUT DIN 6925 M10 6 Fe/Zn 8 C1	
34	1	612692-99-0	SPRING DF 1,5x15x60	
35	1	612898-99-0	SCREW ISO 4017 M5x10 Fe/Zn 5 C1	L.C. DIN 267-28
36	1	601935-99-0	WASHER SRKB5,5x22x1,5 fzb	
37	1		SHAFT	
38	2	600239-99-0	WASHER ISO 7089 8 200 HV Fe/Zn 5 C1 (8,4x16x1,6)	
39	2	600228-99-0	LOCKING NUT ISO 7040 M8 6 Fe/Zn 5 C1	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POS	QTY	PART NO.	DESCRIPTION	
40	1	612722-99-0	ACTUATOR LAS-1 25mm	
41	1	313631-99-0	ELECTRONICS	
42	1		PCB ACTU	
43	4		CIRCUIT BOARD SUPPORT Ø4x4/Ø3	
44	1		CONSOLE	
45	1		STICKER SERIAL NO	
46	2	601381-99-0	SCREW ISO 7380 M4x8 10.9 Fe/Zn 5 C1	
47	1	1820545	CABLE KIT lock indicator	
48	1		CABLE	
49	1		CABLE	
50	2		SCREW M2,3x14 4.8 H Fe/Zn 3 C1	
51	1		MICROSWITCH WASHER	
52	2		WASHER DIN 6798A 2,5x5x0,4 Fe/Zn 5 C1	
53	2		NUT DIN 934 M2,3 8 Fe/Zn 3 C1	

Troubleshooting guide

The following troubleshooting guide describes a number of errors and events which could occur when using your Permolock together with suggested remedies. Note that this guide cannot describe all the problems and events which could occur and you should always contact your service contact or Permobil in case of doubt.

EVENT	POSSIBLE CAUSE	REMEDY
The lamp on the locking device control button flashes red.	Electronics error	Reset system by pressing the control button for 10 seconds.
		Contact service
The locking device is unable to achieve locking position when its control button is activated.	Foreign body in locking device channel.	Remove the foreign body.
	Batteries discharged.	Charge the batteries.
	Error on locking device solenoid.	Contact service
The lamp on the locking plate control button flashes red.	Electronics error	Reset system by pressing the control button for 10 seconds.
		Contact service
The lamp on the locking plate control button shines red and a five-second acoustic signal sounds during manual release.	The release arm is not in locked position (Open).	Make sure the release arm is in locked position and that the wheelchair is definitely in or out of the lock.
The locking plate will not open when its control button is pressed. (The locking plate can always be opened using the manual release handle).	Electronics error	Reset system by pressing the control button for 10 seconds.
		Contact service
The lamp on the locking plate control button flashes irregularly.	The return spring is broken.	Contact service
	The locking mechanism locking arm is loose.	Contact service

Troubleshooting guide

EVENT	POSSIBLE CAUSE	REMEDY
The wheelchair is not locked in position in Permolock.	You have forgotten to press the locking device control button before moving the wheelchair over the locking plate.	Reverse the wheelchair off the locking plate. Press the locking device control button so the locking device extends, before moving in over the locking plate again.
	It is more than 40 seconds since the locking device control button was pressed.	
The wheelchair is not locked in position in Permolock.	The manual release handle is in open position.	Move the manual release handle to locked position.
	The locking mechanism's setting tool is broken.	Contact service
The wheelchair is not adapted to Permolock C when driven in over the lock.	Air pressure in wheelchair tires is too low.	Adjust tire pressure, see wheelchair user manual.
	Permolock's rubber stops are wrongly adjusted.	Adjust the rubber stops as instructed on page 25.
	The wheelchair's shock absorbers are wrongly adjusted.	Adjust the shock absorbers, see wheelchair service manual.

Volvo Cars Safety Centre test report

Research, Development & Purchasing
Volvo Cars Safety Centre
Dept 91480 PV22
SE-405 31 Göteborg
Sweden
Phone +46 31 59 00 00
Telefax +46 31 59 59 22

A sled test simulating a 48 km/h full frontal impact was performed on a sled platform. The purpose of the test was to investigate the performance of a tie down system according to ISO 10542-1:2001(E) and ISO 10542-3:2003(E). One uninstrumented HII 50% dummy was positioned in wheelchair

Customer test number: **05-800**
VCSC test number: **05011903**

Day of test
2005-06-21

Test Engineer
Sebastian Myrin +46 (0) 31 3256383

Customer
Torbjörn Renlund
Permobil AB
Box 120
S - 861 23 Timrå
Sweden

VOLVO

Volvo Cars Safety Centre

1. SUBJECT

A sled test simulating a 48-50 km/h full frontal impact was performed. The purpose of the test was to investigate the performance of a Permolock from Permobil used together with a Permobil C400 wheelchair. One HII 50% dummy was positioned in the wheelchair.

2. OBJECTIVE

To test the equipment according to ISO 10542-1:2001(E) and ISO 10542-3:2003(E).

3. EQUIPMENT UNDER TEST (EUT)

Wheelchair: C400
Fastening system: Permolock
Seat belts: Safety belt Klippan Safety AB 9000965

See also 7.1 Test Vehicle and test data

4. DATE AND LOCATION OF THE TEST

The test was carried out on the 21:st of June 2005 at Volvo Cars Safety Centre, PV Crash simulator 2 in Gothenburg, Sweden Conclusion

5. CONCLUSION

The equipment fulfilled all applicable performance requirements according to ISO 10542-1:2001(E) and ISO 10542-3:2003(E).

All results concern the tested products only.

This report was issued: 2005-10-07

Tests performed by:

Sebastian Myrin

Tests approved by:

Lena Ljungdahl

Volvo Cars Safety Centre test report

Research, Development & Purchasing
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A sled test simulating a 48 km/h full frontal impact was performed on a sled platform. The purpose of the test was to investigate the performance of a tie down system according to ISO 10542-1:2001(E) and ISO 10542-3:2003(E). One uninstrumented HII 50% dummy was positioned in wheelchair

Customer test number: **05-801**
VCSC test number: **05011904**

Day of test
2005-06-22

Test Engineer
Sebastian Myrin +46 (0) 31 3256383

Customer
Torbjörn Renlund
Permobil AB
Box 120
S - 861 23 Timrå
Sweden

VOLVO

Volvo Cars Safety Centre

1. SUBJECT

A sled test simulating a 48-50 km/h full frontal impact was performed. The purpose of the test was to investigate the performance of Permolock used together with a Permobil C500 wheelchair. One HII 50% dummy was positioned in the wheelchair.

2. OBJECTIVE

To test the equipment according to ISO 10542-1:2001(E) and ISO 10542-3:2003(E).

3. EQUIPMENT UNDER TEST (EUT)

Wheelchair: C500
Fastening system: Permolock
Seat belts: Safety belt Klippan Safety AB 907428

See also 7.1 Test Vehicle and test data

4. DATE AND LOCATION OF THE TEST

The test was carried out on the 22:nd of June 2005 at Volvo Cars Safety Centre, PV Crash simulator 2 in Gothenburg, Sweden.

5. CONCLUSION

The equipment fulfilled all applicable performance requirements according to ISO 10542-1:2001(E) and ISO 10542-3:2003(E).

All results concern the tested products only.

This report was issued: 2005-11-07

Tests performed by:

Sebastian Myrin

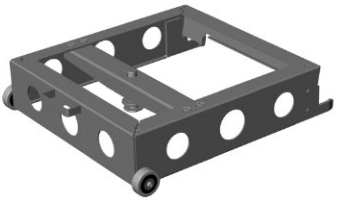
Tests approved by:

Lena Ljungdahl

Accessories

Chair base
Permits use of original car seat in Permolock C.

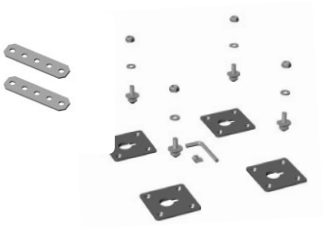
Order no:1820550



Quick anchoring set
Used to anchor the Permolock C in a vehicle and permits easy transfer of the lock between different positions in the vehicle.

The set also includes two installation spacers for installing of the quick anchoring set on a sloping surface.

Order no:1820549



Quick anchoring set for manual relase lever.
Used to anchor the manual release lever in a vehicle and pemits easy fitting and removal.

Order no:1820548

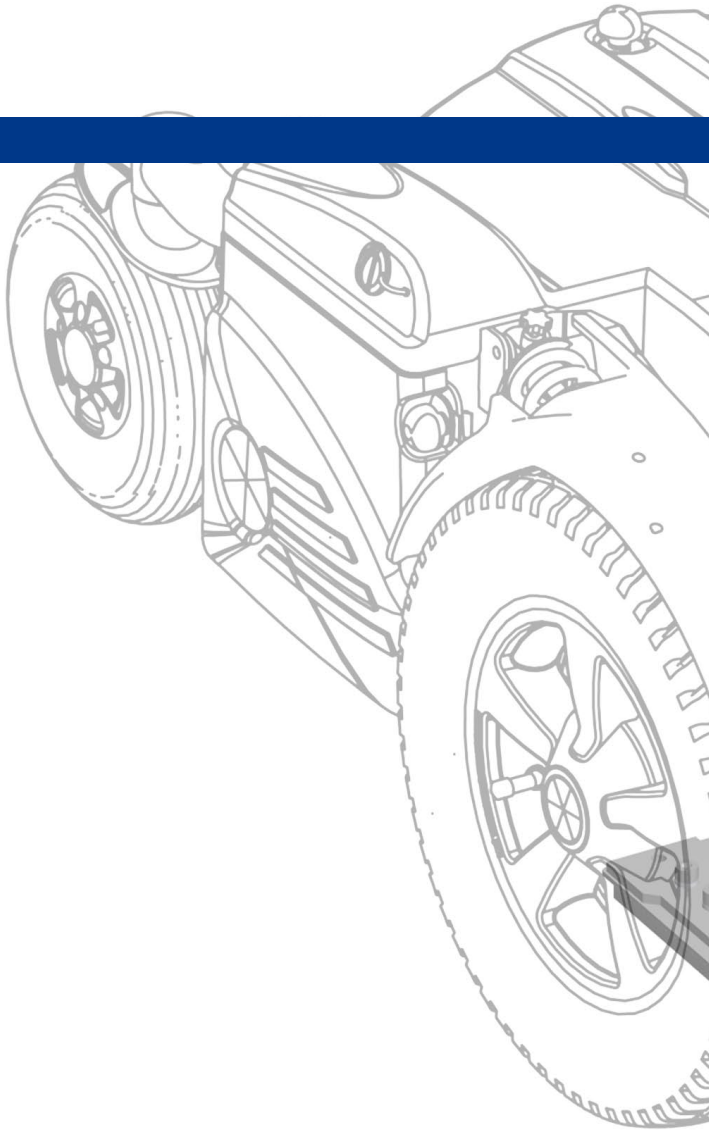
Installation spacer
Used for installing Permolock C with standard brakets on a sloping surface.

Order no:1820547

Control button, advanced design.

*Order no:*1824735

US



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